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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/777,991	02/12/2004	MD Abidur Rahman	TI-36698	6094
23494	7590	04/22/2005	EXAMINER	
TEXAS INSTRUMENTS INCORPORATED P O BOX 655474, M/S 3999 DALLAS, TX 75265			NGUYEN, LONG T	
			ART UNIT	PAPER NUMBER
			2816	

DATE MAILED: 04/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

AK

Office Action Summary	Application No.	Applicant(s)	
	10/777,991	RAHMAN ET AL.	
	Examiner	Art Unit	
	Long Nguyen	2816	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 February 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 21 is/are allowed.
- 6) ☒ Claim(s) 1-4, 10, 11 and 18-20 is/are rejected.
- 7) ☒ Claim(s) 5-9 and 12-17 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

1. Claims 1-17 and 20 are objected to because of the following informalities:

Claim 1, line 3, "pre-drive drive system" should be changed to --pre-drive system--.

Claim 1, line 9, "the circuit" should be changed to --the drive circuit--.

Claims 1-17 are objected to because they include the informalities of claim 1.

Claim 5, line 1, "further" should be deleted.

Claim 5, line 12, it is suggested that "comprises" be changed to --is controlled by-- or --is provided by-- since "the fall time function" is just a timing function and it is not a physical element so it cannot comprises physical elements.

Claim 8, line 2, it is suggested that "material" be changed to --conductivity--.

Claim 12, line 1, "the discharge system further comprises" should be deleted (see claim 1, lines 5-6).

Claim 12, line 2, "a switching structure" should be changed to --the switching structure--.

Claim 12, line 4, "a discharge structure" should be changed to --the discharge structure--.

Claim 12, line 6, --the discharge system further comprises-- should be inserted before "a resistive".

Claim 14, line 2, it is suggested that "material" be changed to --conductivity--.

Claim 17, line 2, it is suggested that "material" be changed to --conductivity--.

Claim 20, line 3, it is suggested that "material" be changed to --conductivity--.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-4, 10, 11 and 18-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Bayer (USP 5,548,240).

With respect to claims 1-4, 10, 11, Figure 3 of the Bayer reference discloses a circuit, which includes: an output interface (node A which interface with downstream circuitry); a pre-drive system (N6, RL, N1, R3) coupled to a first supply voltage (VGH), a first control signal (E_L) and a second control signal (E_E) and have a fall time control function (when switching from Hi to Lo); a discharge system (N2-N5) coupled to the pre-drive system a first node (20) and a second node (gate of N3), coupled to the output interface (A, by way of Cr), and having a switching structure (N3, N5) and a discharge structure (N2, N4); and an output structure (To) coupled to a second supply voltage (M). Note that the drive is adapted to, responsive to the assertion of the first control signal (E_L), deactivate the discharge system, activate the output structure and supply an output drive signal to the output interface (i.e., when first signal E_L is asserted Hi and when E_E is Lo, then signal discharge system is deactivated because N2 is OFF, transistor N6 is ON to activate the output structure To which output drive signal to output interface A); and, responsive to assertion of the second control signal, activate the discharge system deactivate the output structure and discharge the output structure, through the output interface, at a rate determined by the fall time control function (i.e., when second signal E_E is

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asserted Hi, then both transistors N1 and N2 are ON and because N4 is also ON so the discharge system is activated to pull node 20 to Lo, which then deactivate the output structure To; and thus the output structure To is discharged at a rate based on the fall time control function). Note, because the driver circuit in Figure 3 provides the drive signal to interface A when the high voltage of the pre-drive system is driving the output structure (i.e., based on E_L is Hi to provide logic Hi to drive To, so it is reasonable to consider the driver is a high-side drive.

With respect to claims 18-20, Figure 3 of the Bayer reference discloses a circuit which meets all the structure limitations of the claim as discussed above with regard to the apparatus claims. Hence, it also deems to meet all the method steps recited in claims 18-20. Note that the pre-drive system also comprises plurality of resistive elements (R1-R3, RL); and the output structure (To) and the switchable discharge structure (N2-N5) each comprises a transistor of a matching conductivity type (N-channel).

Allowable Subject Matter

4. Claims 5-9 and 12-17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims, and if amended to overcome the informalities set forth above.
5. Claim 21 is presently allowed.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

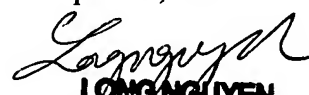
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7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Long Nguyen whose telephone number is (571) 272-1753. The Examiner can normally be reached on Monday to Thursday from 8:00am to 6:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tim Callahan, can be reached at (571) 272-1740. The fax number for this group is (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

April 12, 2005


LONG NGUYEN
PRIMARY EXAMINER